Center for Operational Oceanographic Products and Services
Information Systems Division

Year 2000 Compliancy

Critical System Test Plans: CORMS

Thomas D. Bethem and Michael Evans

Silver Spring, Maryland
March 1999

noaa **National Oceanic And Atmospheric Administration**

U.S. DEPARTMENT OF COMMERCE
National Ocean Service
Center for Operational Oceanographic Products and Services

1.1 Continuous Operational Real Time Monitoring System (CORMS)

Summary:

- Silicon Graphics Incorporated (SGI) IRIX returns the year as the number of years since 1900. The code in the CORMS interface adds the years returned by SGI IRIX 6.5 to 1900 and stores this as the year. No problems are anticipated. The CORMS system is compliant.

1.1.1 Software and Firmware Compliancy

1.1.1.1 Commercial Off the Shelf (COTS) Application Software

The vendors whose products were used in constructing the CORMS interface are:

Netscape (www.netscape.com),
DataViews (www.dvcorp.com)
SGI (www.sgi.com).

Netscape and DataViews are Year 2000 compliant. Statements are available from their web-sites listed above.

1.1.1.2 Operating Systems and BIOS

- All CORMS SGI systems are running IRIX version 6.5 which is compliant.

1.1.1.3 In-House Written Software

- **General**

The applications comprising the CORMS interface are listed below. A letter Y in the “affec” column indicates that an application is affected. If the application is affected then the name of the affected routine and its source code file location are listed.

App/CGI name	affec	routine	source code file
admin.x	Y	GetDateTime	/corms/src/admin/main.cpp
banner_writer.x			
log_viewer.x			
nwlon_log_entry_maker.x	Y	GetDateTime	/corms/src/nwlon_log_entry_maker/main.cpp
nwlon_log_entry_server.x	Y	ExtractDate	/corms/src/nwlon_log_entry_server/main.cpp
nwlon_log_viewer.x			
plotReqPage.x			
PlotEx2.x			
stat_logs.x	Y	ExtractDate	/corms/src/stat_logs/main.cpp
stat_logs_entry_maker.x	Y	GetDateTime	/corms/src/stat_logs_entry_maker/main.cpp
stat_logs_viewer.x			
stat_logs_viewer_fromEntryPage.x			
sys_log_entry_maker.x	Y	GetDateTime	/corms/src/sys_log_entry_maker/main.cpp
sys_log_entry_server.x	Y	ExtractDate	/corms/src/sys_log_entry_server/main.cpp
PORTS_DatasourceGen_blink.x	Y	ObtainFileDate	/corms/src/PORTS_DatasourceGen_blink/port_webX.cpp
logIn			
open2CormsNs4			
cormsStart.x			
cormsLogIn.x	Y	GetDateTime	/corms/src/cormsLogIn/main.cpp
logOut			
cormsLogOut.x	Y	GetDateTime	/corms/src/cormsLogOut/main.cpp

The compliancy of the CORMS interface depends upon the compliancy of SGI IRIX. Date information is extracted from IRIX by the CORMS interface code, and then passed on to the DataViews plug-in and Netscape. Netscape and DataViews software is Year 2000 compliant. *The CORMS interface code does no date manipulations.* It just extracts the date from IRIX. Therefore, the compliancy of the CORMS Interface as a whole depends upon the compliancy of SGI IRIX.

C **Use of Dates - (time stamps etc)**

Dates in the CORMS interface are stored to disk embedded within records. This is a way to date the record. The dates are always stored in MM/DD/YYYY format. No date calculations or manipulations are done by the CORMS interface. Dates are merely extracted from the operating system (OS) through system calls and stored or displayed. There are no date conversions performed, including leap year checks or midnight crossings. All the routines that use dates execute a system call to access the date. SGI IRIX returns the year as the number of years since 1900. The code in the CORMS interface adds the years returned by SGI IRIX 6.5 to 1900 and stores this as the year. No problems are anticipated.

C Testing End to End

All testing was done on the CORMS development platform, using exactly the same SGI IRIX operating system and software installed on the operational CORMS.

The following processes were used to show Y2k compliance.

(1) For the CORMS system to be compliant at the hardware and operating system level, the current version of the operating system, IRIX 6.4, was upgraded to IRIX 6.5. This upgrade is required by SGI to ensure the compliancy of the hardware and operating system. The upgrade was accomplished by installing the SGI supplied CD-ROM set. After IRIX 6.5 was installed on the system, date tests were conducted insure the statements made by SGI in the Y2K compliancy statement were correct.

- January 1, 2000
- February 28, 2000
- February 29, 2000
- March 1, 2000

The above dates were tested to see that when the system clock reached the tested date it responded with the correct date and time when the IRIX “date” command was issued.

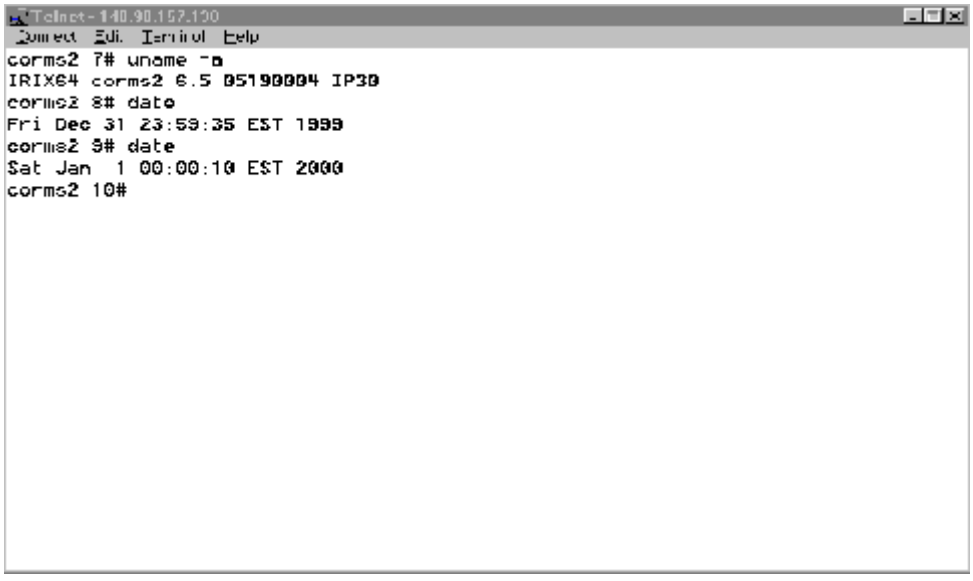

Figure 1 CORMS Screen Dump

Figure 1 shows that CORMS is running the proper operating system and that the system handles the critical date change over of January 1, 2000. Each of the other critical dates was tested and passed this operating system level test.

(2) For the CORMS system to be compliant at the application level, the system needs to operate when the date crosses the critical time periods. Test were conducted on CORMS where the system was monitored after the time on the system was set to the critical dates. Figure 2 shows the CORMS main screen after the date and time were set to the critical date January 1, 2000. As you can see from the example screen above, ***the critical date passing has no effect on the CORMS system***. The system reflects the date and times that are in the PORTS data stream. As long as the data that arrives at CORMS is Y2K compliant, the CORMS application will be Y2K compliant. For more

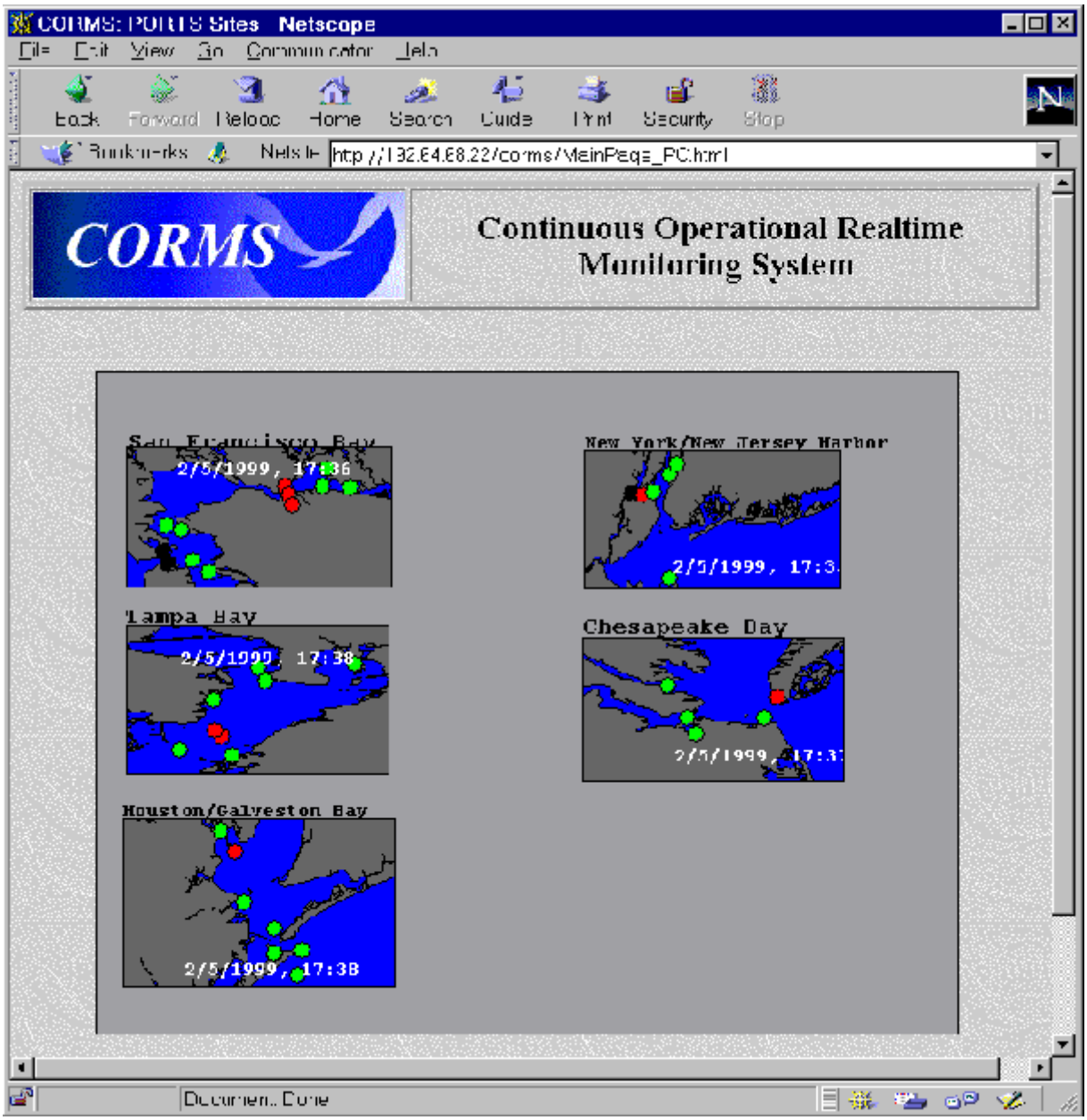

Figure 2 CORMS main screen after system clock set to January 1, 2000.

information of PORTS Y2K compliancy see the “Critical System Test Plan: PORTS”. It is important to remember that the CORMS system does not implement any date manipulation software. It only request the system date from CORMS. So therefore if the operating system is Y2K compliant and the data CORMS receives is Y2K compliant, then CORMS is Y2K compliant. Figure 3 shows us that CORMS only uses the system date for

display purposes (note the header banner) but uses the data arriving to the system to convey the date and time of the data.

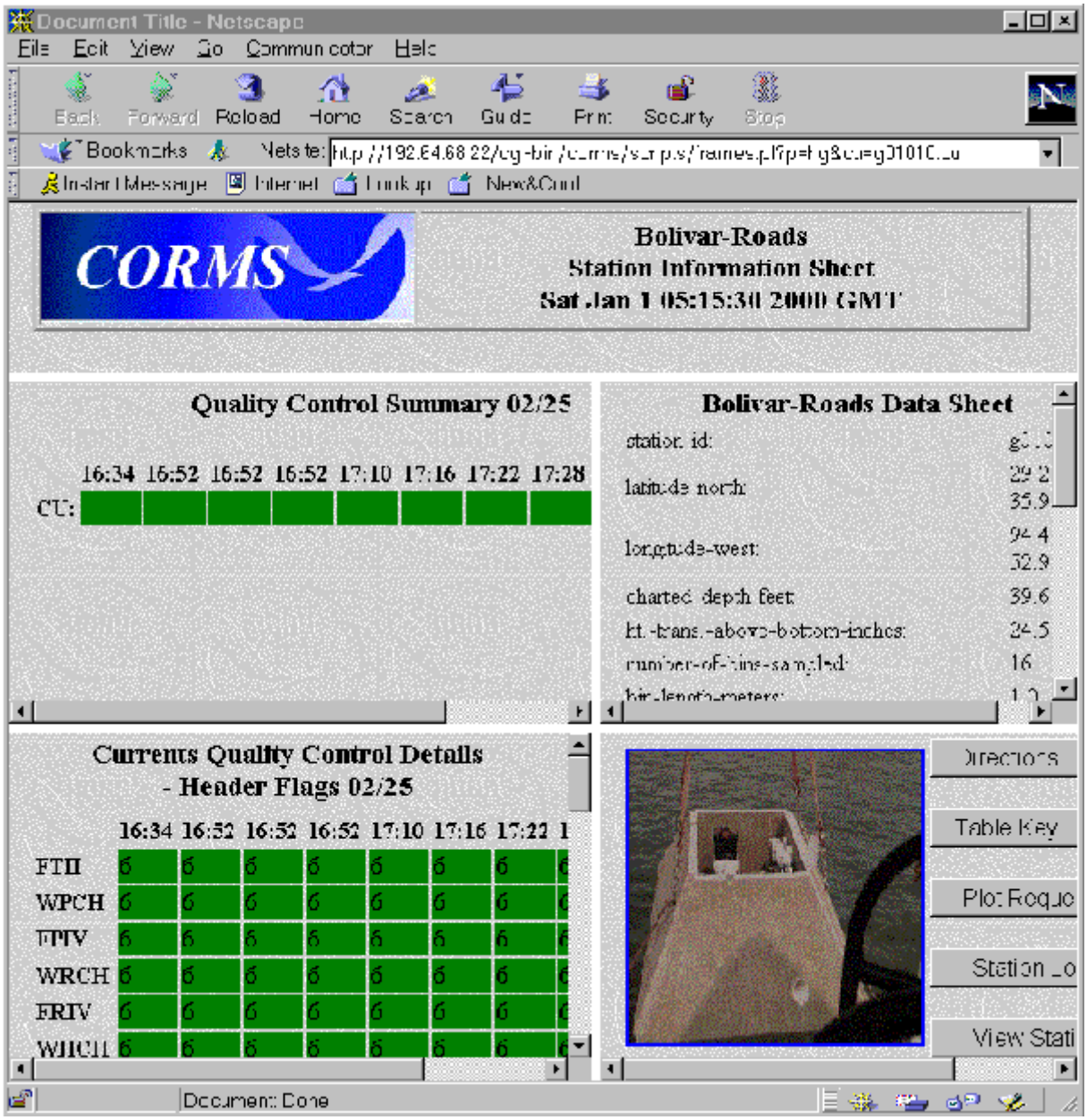

Figure 3 - CORMS summary screen displaying a critical date passing.

1.1.2 Hardware Compliancy

- All Silicon Graphics workstations are running IRIX version 6.5 which is compliant. Letters of compliancy on file.

- All Silicon Graphics workstation hardware is compliant. Letters of compliancy on file.